

Appendix H.1

Federal Water Quality Criteria for Freshwater, Saltwater, and Human Health (40 CFR Part 131)

Environmental Protection Agency

**Tuesday
December 22, 1992**

Part II

**Environmental
Protection Agency**

40 CFR Part 131

**Water Quality Standards; Establishment
of Numeric Criteria for Priority Toxic
Pollutants; States' Compliance Final Rule**

A		B		C		D		
		FRESHWATER		SALTWATER		HUMAN HEALTH (10 ⁻⁶ risk for carcinogens)		
#	COMPOUND	CAS Number	Criterion Maximum Conc. d (ug/L)	Criterion Continuous Conc. d (ug/L)	Criterion Maximum Conc. d (ug/L)	Criterion Continuous Conc. d (ug/L)	For Consumption of: Water & Organisms (ug/L)	Organisms Only (ug/L)
			B1	B2	C1	C2	D1	D2
1	Antimony	7440360					14 a	4300 a
2	Arsenic	7440382	360 m	190 m	69 m	36 m	0.018 a,b,c	0.14 a,b,c
3	Beryllium	7440417					n	n
4	Cadmium	7440439	3.9 e,m	1.1 e,m	43 m	9.3 m	n	n
5a	Chromium (III)	16065831	1700 e,m	210 e,m			n	n
b	Chromium (VI)	18540299	16 m	11 m	1100 m	50 m	n	n
6	Copper	7440508	18 e,m	12 e,m	2.9 m	2.9 m		
7	Lead	7439921	82 e,m	3.2 e,m	220 m	8.5 m	n	n
8	Mercury	7439976	2.4 m	0.012 i	2.1 m	0.025 i	0.14	0.15
9	Nickel	7440020	1400 e,m	160 e,m	75 m	8.3 m	610 a	4600 a
10	Selenium	7782492	20	5	300 m	71 m	n	n
11	Silver	7440224	4.1 e,m		2.3 m			
12	Thallium	7440280					1.7 a	6.3 a
13	Zinc	7440666	120 e,m	110 e,m	95 m	86 m		
14	Cyanide	57125	22	5.2	1	1	700 a	220000 a,j
15	Asbestos	1332214					7,000,000 fibers/L	k
16	2,3,7,8-TCDD (Dioxin)	1746016					0.000000013 c	0.000000014 c
17	Acrolein	107028					320	780
18	Acrylonitrile	107131					0.059 a,c	0.66 a,c
19	Benzene	71432					1.2 a,c	71 a,c
20	Bromoform	75252					4.3 a,c	360 a,c
21	Carbon Tetrachloride	56235					0.25 a,c	4.4 a,c
22	Chlorobenzene	108907					680 a	21000 a,j
23	Chlorodibromomethane	124481					0.41 a,c	34 a,c
24	Chloroethane	75003						
25	2-Chloroethylvinyl Ether	110758						
26	Chloroform	67663					5.7 a,c	470 a,c
27	Dichlorobromomethane	75274					0.27 a,c	22 a,c

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			B1	B2	C1	C2	D1 (ug/L)	D2 (ug/L)
28	1,1-Dichloroethane	75343						
29	1,2-Dichloroethane	107062					0.38 a,c	99 a,c
30	1,1-Dichloroethylene	75354					0.057 a,c	3.2 a,c
31	1,2-Dichloropropane	78875						
32	1,3-Dichloropropylene	542756					10 a	1700 a
33	Ethylbenzene	100414					3100 a	29000 a
34	Methyl Bromide	74839					48 a	4000 a
35	Methyl Chloride	74873					n	n
36	Methylene Chloride	75092					4.7 a,c	1600 a,c
37	1,1,2,2-Tetrachloroethane	79345					0.17 a,c	11 a,c
38	Tetrachloroethylene	127184					0.8 c	8.85 c
39	Toluene	108883					6800 a	200000 a
40	1,2-Trans-Dichloroethylene	156605						
41	1,1,1-Trichloroethane	71556					n	n
42	1,1,2-Trichloroethane	79005					0.60 a,c	42 a,c
43	Trichloroethylene	79016					2.7 c	81 c
44	Vinyl Chloride	75014					2 c	525 c
45	2-Chlorophenol	95578						
46	2,4-Dichlorophenol	120832					93 a	790 a,j
47	2,4-Dimethylphenol	105679						
48	2-Methyl-4,6-Dinitrophenol	534521					13.4	765
49	2,4-Dinitrophenol	51285					70 a	14000 a
50	2-Nitrophenol	88755						
51	4-Nitrophenol	100027						
52	3-Methyl-4-Chlorophenol	59507						
53	Pentachlorophenol	87865	20 f	13 f	13	7.9	0.28 a,c	8.2 a,c,j
54	Phenol	108952					21000 a	4600000 a,j
55	2,4,6-Trichlorophenol	88062					2.1 a,c	6.5 a,c
56	Acenaphthene	83329						

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			B1	B2	C1	C2	D1	D2
57	Acenaphthylene	208968						
58	Anthracene	120127					9600 a	110000 a
59	Benzidine	92875					0.00012 a,c	0.00054 a,c
60	Benzo(a)Anthracene	56553					0.0028 c	0.031 c
61	Benzo(a)Pyrene	50328					0.0028 c	0.031 c
62	Benzo(b)Fluoranthene	205992					0.0028 c	0.031 c
63	Benzo(ghi)Perylene	191242						
64	Benzo(k)Fluoranthene	207089					0.0028 c	0.031 c
65	Bis(2-Chloroethoxy)Methane	111911						
66	Bis(2-Chloroethyl)Ether	111444					0.031 a,c	1.4 a,c
67	Bis(2-Chloroisopropyl)Ether	108601					1400 a	170000 a
68	Bis(2-Ethylhexyl)Phthalate	117817					1.8 a,c	5.9 a,c
69	4-Bromophenyl Phenyl Ether	101553						
70	Butylbenzyl Phthalate	85687						
71	2-Chloronaphthalene	91587						
72	4-Chlorophenyl Phenyl Ether	7005723						
73	Chrysene	218019					0.0028 c	0.031 c
74	Dibenzo(a,h)Anthracene	53703					0.0028 c	0.031 c
75	1,2-Dichlorobenzene	95501					2700 a	17000 a
76	1,3-Dichlorobenzene	541731					400	2600
77	1,4-Dichlorobenzene	106467					400	2600
78	3,3'-Dichlorobenzidine	91941					0.04 a,c	0.077 a,c
79	Diethyl Phthalate	84662					23000 a	120000 a
80	Dimethyl Phthalate	131113					313000	2900000
81	Di-n-Butyl Phthalate	84742					2700 a	12000 a
82	2,4-Dinitrotoluene	121142					0.11 c	9.1 c
83	2,6-Dinitrotoluene	606202						
84	Di-n-Octyl Phthalate	117840						
85	1,2-Diphenylhydrazine	122667					0.040 a,c	0.54 a,c

A		B		C		D		
		FRESHWATER		SALTWATER		HUMAN HEALTH (10 ⁻⁶ risk for carcinogens)		
#	COMPOUND	CAS Number	Criterion	Criterion	Criterion	Criterion	For Consumption of:	
			Maximum	Continuous	Maximum	Continuous	Water &	Organisms
			Conc. d	Conc. d	Conc. d	Conc. d	Organisms	Only
			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
			B1	B2	C1	C2	D1	D2
86	Fluoranthene	206440					300 a	370 a
87	Fluorene	86737					1300 a	14000 a
88	Hexachlorobenzene	118741					0.00075 a,c	0.00077 a,c
89	Hexachlorobutadiene	87683					0.44 a,c	50 a,c
90	Hexachlorocyclopentadiene	77474					240 a	17000 a,j
91	Hexachloroethane	67721					1.9 a,c	8.9 a,c
92	Indeno(1,2,3-cd)Pyrene	193395					0.0028 c	0.031 c
93	Isophorone	78591					8.4 a,c	600 a,c
94	Naphthalene	91203						
95	Nitrobenzene	98953					17 a	1900 a,j
96	N-Nitrosodimethylamine	62759					0.00069 a,c	8.1 a,c
97	N-Nitrosodi-n-Propylamine	621647						
98	N-Nitrosodiphenylamine	86306					5.0 a,c	16 a,c
99	Phenanthrene	85018						
100	Pyrene	129000					960 a	11000 a
101	1,2,4-Trichlorobenzene	120821						
102	Aldrin	309002	3 g		1.3 g		0.00013 a,c	0.00014 a,c
103	alpha-BHC	319846					0.0039 a,c	0.013 a,c
104	beta-BHC	319857					0.014 a,c	0.046 a,c
105	gamma-BHC	58899	2 g	0.08 g	0.16 g		0.019 c	0.063 c
106	delta-BHC	319868						
107	Chlordane	57749	2.4 g	0.0043 g	0.09 g	0.004 g	0.00057 a,c	0.00059 a,c
108	4,4'-DDT	50293	1.1 g	0.001 g	0.13 g	0.001 g	0.00059 a,c	0.00059 a,c
109	4,4'-DDE	72559					0.00059 a,c	0.00059 a,c
110	4,4'-DDD	72548					0.00083 a,c	0.00084 a,c
111	Dieldrin	60571	2.5 g	0.0019 g	0.71 g	0.0019 g	0.00014 a,c	0.00014 a,c
112	alpha-Endosulfan	959988	0.22 g	0.056 g	0.034 g	0.0087 g	0.93 a	2.0 a
113	beta-Endosulfan	33213659	0.22 g	0.056 g	0.034 g	0.0087 g	0.93 a	2.0 a

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			B1	B2	C1	C2	D1	D2
114	Endosulfan Sulfate	1031078					0.93 a	2.0 a
115	Endrin	72208	0.18 g	0.0023 g	0.037 g	0.0023 g	0.76 a	0.81 a,j
116	Endrin Aldehyde	7421934					0.76 a	0.81 a,j
117	Heptachlor	76448	0.52 g	0.0038 g	0.053 g	0.0036 g	0.00021 a,c	0.00021 a,c
118	Heptachlor Epoxide	1024573	0.52 g	0.0038 g	0.053 g	0.0036 g	0.00010 a,c	0.00011 a,c
119	PCB-1242	53469219		0.014 g		0.03 g	0.000044 a,c	0.000045 a,c
120	PCB-1254	11097691		0.014 g		0.03 g	0.000044 a,c	0.000045 a,c
121	PCB-1221	11104282		0.014 g		0.03 g	0.000044 a,c	0.000045 a,c
122	PCB-1232	11141165		0.014 g		0.03 g	0.000044 a,c	0.000045 a,c
123	PCB-1248	12672296		0.014 g		0.03 g	0.000044 a,c	0.000045 a,c
124	PCB-1260	11096825		0.014 g		0.03 g	0.000044 a,c	0.000045 a,c
125	PCB-1016	12674112		0.014 g		0.03 g	0.000044 a,c	0.000045 a,c
126	Toxaphene	8001352	0.73	0.0002	0.21	0.0002	0.00073 a,c	0.00075 a,c
Total No. of Criteria (h) =			24	29	23	27	91	90

Footnotes:

a. Criteria revised to reflect current agency q_1^* or RfD, as contained in the Integrated Risk Information System (IRIS). The fish tissue bioconcentration factor (BCF) from the 1980 criteria documents was retained in all cases.

b. The criteria refers to the inorganic form only.

c. Criteria in the matrix based on carcinogenicity (10^{-6} risk). For a risk level of 10^{-5} , move the decimal point in the matrix value one place to the right.

d. Criteria Maximum Concentration (CMC) = the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (1-hour average) without deleterious effects. Criteria Continuous Concentration (CCC) = the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects, $\mu\text{g/L}$ = micrograms per liter

e. Freshwater aquatic life criteria for these metals are expressed as a function of total hardness (mg/L), and as a function of the pollutant's water effect ratio, WER, as defined in §131.36(c). The equations are provided in matrix at §131.36(b)(2). Values displayed above in the matrix correspond to a total hardness of 100 mg/L and a water effect ratio of 1.0.

f. Freshwater aquatic life criteria for pentachlorophenol are expressed as a function of pH, and are calculated as follows. Values displayed above in the matrix correspond to a pH of 7.8.

$$\text{CMC} = \exp(1.005(\text{pH}) - 4.830) \quad \text{CCC} = \exp(1.005(\text{pH}) - 5.290)$$

g. Aquatic life criteria for these compounds were issued in 1980 utilizing the 1980 Guidelines for criteria development. The acute values shown are final acute values (FAV) which by the 1980 Guide-

lines are instantaneous values as contrasted with a CMC which is a one-hour average.

h. These totals simply sum the criteria in each column. For aquatic life, there are 30 priority toxic pollutants with some type of freshwater or saltwater, acute or chronic criteria. For human health, there are 91 priority toxic pollutants with either "water + fish" or "fish only" criteria. Note that these totals count chromium as one pollutant even though EPA has developed criteria based on two valence states. In the matrix, EPA has assigned numbers 5a and 5b to the criteria for chromium to reflect the fact that the list of 126 priority toxic pollutants includes only a single listing for chromium.

i. If the CCC for total mercury exceeds 0.012 $\mu\text{g/L}$ more than once in a 3-year period in the ambient water, the edible portion of aquatic species of concern must be analyzed to determine whether the concentration of methyl mercury exceeds the FDA action level (1.0 mg/kg). If the FDA action level is exceeded, the State must notify the appropriate EPA Regional Administrator, initiate a revision of its mercury criterion in its water quality standards so as to protect designated uses, and take other appropriate action such as issuance of a fish consumption advisory for the affected area.

j. No criteria for protection of human health from consumption of aquatic organisms (excluding water) was presented in the 1980 criteria document or in the 1986 Quality Criteria for Water. Nevertheless, sufficient information was presented in the 1980 document to allow a calculation of a criterion, even though the results of such a calculation were not shown in the document.

k. The criterion for asbestos is the MCL (56 FR 3526, January 30, 1991).

l. This letter not used as a footnote.

m. Criteria for these metals are expressed as a function of the water effect ratio, WER, as defined in 40 CFR 131.36(c).

$$\text{CMC} = \text{column B1 or C1 value} \times \text{WER} \\ \text{CCC} = \text{column B2 or C2 value} \times \text{WER}$$

n. EPA is not promulgating human health criteria for this contaminant. However, permit authorities should address this contaminant in NPDES permit actions using the State's existing narrative criteria for toxics.

General Notes:

1. This chart lists all of EPA's priority toxic pollutants whether or not criteria recommendations are available. Blank spaces indicate the absence of criteria recommendations. Because of variations in chemical nomenclature systems, this listing of toxic pollutants does not duplicate the listing in Appendix A of 40 CFR Part 423. EPA has added the Chemical Abstracts Service (CAS) registry numbers, which provide a unique identification for each chemical.

2. The following chemicals have organoleptic based criteria recommendations that are not included on this chart (for reasons which are discussed in the preamble): copper, zinc, chlorobenzene, 2-chlorophenol, 2,4-dichlorophenol, acenaphthene, 2,4-dimethylphenol, 3-methyl-4-chlorophenol, hexachlorocyclopentadiene, pentachlorophenol, phenol

3. For purposes of this rulemaking, freshwater criteria and saltwater criteria apply as specified in 40 CFR 131.36(c).

(2) *Factors for Calculating Metals Criteria*

$$CMC = WER \exp[m_A(\ln(\text{hardness})) + b_A] \quad CCC = WER \exp[m_C(\ln(\text{hardness})) + b_C]$$

	m_A	b_A	m_C	b_C
Cadmium.....	1.128	-3.828	0.7852	-3.490
Copper.....	0.9422	-1.464	0.8545	-1.465
Chromium (III).....	0.8190	3.688	0.8190	1.561
Lead.....	1.273	-1.460	1.273	-4.705
Nickel.....	0.8460	3.3612	0.8460	1.1645
Silver.....	1.72	-6.52
Zinc.....	0.8473	0.8604	0.8473	0.7614

Note: The term "exp" represents the base e exponential function.

(c) Applicability.

(1) The criteria in paragraph (b) of this section apply to the States' designated uses cited in paragraph (d) of this section and supersede any criteria adopted by the State, except when State regulations contain criteria which are more stringent for a particular use in which case the State's criteria will continue to apply.

(2) The criteria established in this section are subject to the State's general rules of applicability in the same way and to the same extent as are the other numeric toxics criteria when applied to the same use classifications including mixing zones, and low flow values below which numeric standards can be exceeded in flowing fresh waters.

(i) For all waters with mixing zone regulations or implementation procedures, the criteria apply at the appropriate locations within or at the boundary of the mixing zones; otherwise the criteria apply throughout the waterbody including at the end of any discharge pipe, canal or other discharge point.

(ii) A State shall not use a low flow value below which numeric standards can be exceeded that is less stringent than the following for waters suitable for the establishment of low flow return frequencies (i.e., streams and rivers):

Aquatic Life

Acute criteria (CMC) 1 Q 10 or 1 B 3
Chronic criteria (CCC) 7 Q 10 or 4 B 3

Human Health

Non-carcinogens 30 Q 5
Carcinogens Harmonic mean flow

Where:

CMC—criteria maximum concentration—the water quality criteria to protect against acute effects in aquatic life and is the highest instream concentration of a priority toxic pollutant consisting of a one-hour average not to be exceeded more

than once every three years on the average;

CCC—criteria continuous concentration—the water quality criteria to protect against chronic effects in aquatic life is the highest instream concentration of a priority toxic pollutant consisting of a 4-day average not to be exceeded more than once every three years on the average;

1 Q 10 is the lowest one day flow with an average recurrence frequency of once in 10 years determined hydrologically;

1 B 3 is biologically based and indicates an allowable exceedence of once every 3 years. It is determined by EPA's computerized method (DFLOW model);

7 Q 10 is the lowest average 7 consecutive day low flow with an average recurrence frequency of once in 10 years determined hydrologically;

4 B 3 is biologically based and indicates an allowable exceedence for 4 consecutive days once every 3 years. It is determined by EPA's computerized method (DFLOW model);

30 Q 5 is the lowest average 30 consecutive day low flow with an average recurrence frequency of once in 5 years determined hydrologically; and the harmonic mean flow is a long term mean flow value calculated by dividing the number of daily flows analyzed by the sum of the reciprocals of those daily flows.

(iii) If a State does not have such a low flow value for numeric standards compliance, then none shall apply and the criteria included in paragraph (d) of this section herein apply at all flows.

(3) The aquatic life criteria in the matrix in paragraph (b) of this section apply as follows:

(i) For waters in which the salinity is equal to or less than 1 part per thousand 95% or more of the time, the applicable criteria are the freshwater criteria in Column B;

(ii) For waters in which the salinity is equal to or greater than 10 parts per thousand 95% or more of the time, the appli-

cable criteria are the saltwater criteria in Column C; and

(iii) For waters in which the salinity is between 1 and 10 parts per thousand as defined in paragraphs (c)(3) (i) and (ii) of this section, the applicable criteria are the more stringent of the freshwater or saltwater criteria. However, the Regional Administrator may approve the use of the alternative freshwater or saltwater criteria if scientifically defensible information and data demonstrate that on a site-specific basis the biology of the waterbody is dominated by freshwater aquatic life and that freshwater criteria are more appropriate; or conversely, the biology of the waterbody is dominated by saltwater aquatic life and that saltwater criteria are more appropriate.

(4) Application of metals criteria.

(i) For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, the minimum hardness allowed for use in those equations shall not be less than 25 mg/l, as calcium carbonate, even if the actual ambient hardness is less than 25 mg/l as calcium carbonate. The maximum hardness value for use in those equations shall not exceed 400 mg/l as calcium carbonate, even if the actual ambient hardness is greater than 400 mg/l as calcium carbonate. The same provisions apply for calculating the metals criteria for the comparisons provided for in paragraph (c)(3)(iii) of this section.

(ii) The hardness values used shall be consistent with the design discharge conditions established in paragraph (c)(2) of this section for flows and mixing zones.

(iii) The criteria for metals (compounds #1-#13 in paragraph (b) of this section) are expressed as total recoverable. For purposes of calculating aquatic life criteria for metals from the equations in footnote M. in the criteria matrix in paragraph (b)(1) of this section and the equations in paragraph (b)(2) of this section, the water-effect ratio is computed as a

Specific pollutant's acute or chronic toxicity values measured in water from the site covered by the standard, divided by the respective acute or chronic toxicity value in laboratory dilution water. The water-effect ratio shall be assigned a value of 1.0, except where the permitting authority assigns a different value that protects the designated uses of the water body from the toxic effects of the pollutant, and is derived from suitable tests on sampled water representative of conditions in the affected water body, consistent with the design discharge conditions established in paragraph (c)(2) of this section. For purposes of this paragraph, the term acute toxicity value is the toxicity test results, such as the ~~Concentration that to~~ one-half of the test organisms (i.e., LC50) after 96 hours of exposure (e.g., fish toxicity tests) or the effect concentration to one-half of the test organisms, (i.e., EC50) after 48 hours of exposure (e.g., daphnia toxicity tests). For purposes of this paragraph, the term chronic value is the result from appropriate hypothesis testing or regression analysis of measurements of growth, reproduction, or survival from life cycle, partial life cycle, or early life stage tests. The determination of acute and chronic values shall be according to current standard protocols (e.g., those published by the American Society for Testing Materials (ASTM)) or other comparable methods. For calculation of criteria using site-specific values for both the hardness and the water effect ratio, the hardness used in the equations in paragraph (b)(2) of this section shall be as required in paragraph (c)(4)(ii) of this section. Water hardness shall be calculated from the measured calcium and magnesium ions present, and the ratio of calcium to magnesium shall be approximately the same in standard laboratory toxicity testing water as in the site water.

(d) Criteria for Specific Jurisdictions—

(1) Rhode Island, EPA Region 1.

(i) All waters assigned to the following use classifications in the Water Quality Regulations for Water Pollution Control adopted under Chapters 46-12, 42-17.1, and 42-35 of the General Laws of Rhode Island are subject to the criteria in paragraph (d)(1)(ii) of this section, without exception:

6.21 Freshwater

Class A.....
Class B.....
Class C.....

6.22 Saltwater:

Class SA.....
Class SB.....
Class SC.....

(ii) The following criteria from the matrix in paragraph (b)(1) of this section apply to the use classifications identified in paragraph (d)(1)(i) of this section:

Use classification	Applicable criteria
Class A	These classifications are assigned the criteria in: Column D1—all
Class B waters where water supply use is designated	
Class B waters where water supply use is not designated:	
Class C; Class SA; Class SB; Class SC	Each of these classifications is assigned the criteria in: Column D2—all

(iii) The human health criteria shall be applied at the 10^{-5} risk level, consistent with the State policy. To determine appropriate value for carcinogens, see footnote c in the criteria matrix in paragraph (b)(1) of this section.

(2) Vermont, EPA Region 1.

(i) All waters assigned to the following use classifications in the Vermont Water Quality Standards adopted under the authority of the Vermont Water Pollution Control Act (10 V.S.A., Chapter 47) are subject to the criteria in paragraph (d)(2)(ii) of this section, without exception:

Class A	This classification is assigned the criteria in: Column B1—all Column B2—all Column D1—all
Class B	
Class C	
Class B waters where water supply use is not designated	These classifications are assigned the criteria in: Column B1—all Column B2—all Column D2—all
Class C	

(iii) The human health criteria shall be applied at the State-proposed 10^{-6} risk level.

(3) New Jersey, EPA Region 2.

(i) All waters assigned to the following use classifications in the New Jersey Administrative Code (N.J.A.C.) 7:9-4.1 et seq., Surface Water Quality Standards, are subject to the criteria in paragraph (d)(3)(ii) of this section, without exception.

N.J.A.C. 7:9-4.12(b): Class PL
N.J.A.C. 7:9-4.12(c): Class FW2
N.J.A.C. 7:9-4.12(d): Class SE1
N.J.A.C. 7:9-4.12(e): Class SE2
N.J.A.C. 7:9-4.12(f): Class SE3
N.J.A.C. 7:9-4.12(g): Class SC
N.J.A.C. 7:9-4.13(a): Delaware River Zones 1C, 1D, and 1E
N.J.A.C. 7:9-4.13(b): Delaware River Zone 2
N.J.A.C. 7:9-4.13(c): Delaware River Zone 3
N.J.A.C. 7:9-4.13(d): Delaware River Zone 4
N.J.A.C. 7:9-4.13(e): Delaware River Zone 5
N.J.A.C. 7:9-4.13(f): Delaware River Zone 6

(ii) The following criteria from the matrix in paragraph (b)(1) of this section apply to the use classifications identified in paragraph (d)(3)(i) of this section:

Use classification	Applicable criteria
PL (Freshwater Pine-lands), FW2	These classifications are assigned the criteria in: Column B1—all except #102, 105, 107, 108, 111, 112, 113, 115, 117, 118. Column B2—all except #105, 107, 108, 111, 112, 113, 115, 117, 118, 119, 120, 121, 122, 123, 124, and 125. Column D1—all at a 10^{-6} risk level except #23, 30, 37, 38, 42, 68, 89, 91, 93, 104, 105; #23, 30, 37, 38, 42, 68, 89, 91, 93, 104, 105, at a 10^{-5} risk level. Column D2—all at a 10^{-6} risk level except #23, 30, 37, 38, 42, 68, 89, 91, 93, 104, 105; 23, 30, 37, 38, 42, 68, 89, 91, 93, 104, 105, at a 10^{-5} risk level.
PL (Saline Water Pine-lands), SE1, SE2, SE3, SC	These classifications are assigned the criteria in:

Thursday
May 4, 1995

Federal Register

Part IV

Environmental Protection Agency

40 CFR Part 131

**Stay of Federal Water Quality Criteria for
Metals; Water Quality Standards;
Establishment of Numeric Criteria for
Priority Toxic Pollutants; States'
Compliance—Revision of Metals Criteria;
Final Rules**

ENVIRONMENTAL PROTECTION
AGENCY

40 CFR Part 131

[FRL-5196-2]

Stay of Federal Water Quality Criteria
for MetalsAGENCY: Environmental Protection
Agency (EPA).

ACTION: Administrative stay.

SUMMARY: In December 1992, EPA promulgated water quality criteria for toxic pollutants in order to protect human health and aquatic life in fourteen states that had not adopted the necessary toxics criteria as required by the Clean Water Act. Some of the criteria are for protection of aquatic life from the effects of metals in the water. After EPA promulgated the rule, EPA issued a new policy for setting water quality criteria for metals. In order to allow permitting authorities in the states covered by the rule the flexibility to follow EPA's new policy, the Agency is staying the effectiveness of specific metals criteria promulgated in the rule. The stay will remain in effect until EPA promulgates new metals criteria for the states covered by the rule.

EFFECTIVE DATE: This stay is effective April 14, 1995.

FOR FURTHER INFORMATION CONTACT: Tim Kasten, Office of Science and Technology, Office of Water (4304), USEPA, 401 M Street SW., Washington, D.C. 20460, (202) 260-5994.

SUPPLEMENTARY INFORMATION:

Background

In the National Toxics Rule ("NTR"), EPA promulgated numeric water quality criteria for toxic pollutants for fourteen states and jurisdictions that had not adopted sufficient criteria ("NTR states"). 57 FR 60848 (December 22, 1992). That action brought those states into compliance with section 303(c)(2)(B) of the Clean Water Act ("CWA") which requires states to adopt criteria for all toxic pollutants the discharge or presence of which could interfere with state designated uses of waters, and for which EPA had published criteria.

Among the criteria that EPA promulgated for the NTR states were aquatic life water quality criteria for metals ("metals criteria"). Aquatic life water quality criteria are estimates of the highest concentration of a substance that may be present in water while maintaining the protection of aquatic life from acute or chronic effects. A central issue in establishing and

implementing metals criteria is how to accurately determine the fraction of the total metal that is biologically available and toxic.

At the time that EPA promulgated the NTR, the Agency's policy was to express metals criteria using total recoverable metal concentrations ("total recoverable metal"). While metals criteria could be implemented by measuring either total recoverable metal or dissolved metal, total recoverable metal measurement, being more conservative, provided a greater level of protection than dissolved metal measurement. Because the NTR was to cover a substantial number of water bodies, EPA chose the simplest, most protective approach, and the one reflected in its criteria documents to implement the metals criteria, and promulgated metals criteria based on total recoverable metal.

After promulgation of the NTR, the Agency continued to address the issue of how best to express metals criteria. EPA held a meeting with invited experts in January 1993 in Annapolis, Maryland to further elicit comment on the use of total recoverable metal versus dissolved metal in developing national metals criteria. The Agency solicited comments on the recommendations made by presenters at the meeting in the Federal Register on July 9, 1993 (58 FR 32131). Subsequently, EPA determined that dissolved metal approximates the biologically available fraction of waterborne metals for aquatic organisms better than total recoverable metal. On October 1, 1993, the Agency issued guidance on the interpretation and implementation of metals criteria providing that "it is now the policy of the Office of Water that the use of dissolved metal to set and measure compliance with water quality standards is the recommended approach * * *. *Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria.*"

A number of parties brought lawsuits challenging the NTR metals criteria. The Plaintiffs in those lawsuits wanted the permitting authorities in the NTR states to use criteria based on dissolved metal. EPA has concluded that it is in the public interest to revise the metals criteria promulgated in the NTR to reflect the new metals policy. In settlement of the litigation, EPA has agreed to stay the numeric aquatic life water quality criteria (expressed as total recoverable metal) for: arsenic, cadmium, chromium (III), chromium (VI), copper, lead, mercury (acute only), nickel, selenium (saltwater only), silver, and zinc. This stay will be in effect until EPA takes action to amend the NTR by

promulgating new metals criteria based on dissolved metal.

Effective Date of the Stay

Pursuant to section 705 of the Administrative Procedure Act (APA) (5 U.S.C. 705), "when an agency finds that justice so requires, it may postpone the effective date of actions taken by it, pending judicial review." EPA has determined that this stay is necessary pending resolution of the litigation. Consequently, EPA finds issuance of this stay is in the interests of justice.

In addition, under section 553 of the APA (5 U.S.C. 553), when an Agency finds good cause to exist, it may issue a rule without first providing notice and comment and make the rule immediately effective. EPA believes that it has good cause both to issue this stay without notice and comment and to make the stay immediately effective.

A stay of the metals criteria is central to the settlement of the pending litigation, and it is in the public interest to avoid costly and potentially protracted litigation by issuing a stay. Further, the stay relieves a burden on the regulated community. The stay will avoid potential harm to dischargers in the NTR states for which National Pollutant Discharge Elimination System permits are being issued pursuant to section 402 of the Clean Water Act by allowing permitting authorities to establish permit limits based on dissolved metal concentrations consistent with current Agency policy. It is not in the public interest to require permitting authorities in the NTR states to impose effluent limitations based on total recoverable metal ambient water quality criteria which EPA now considers to be more stringent than may be necessary to protect designated uses.

EPA considers staying the metals criteria to be in the public interest as noted above, and therefore good cause exists to issue the stay without notice and comment and to make the stay immediately effective.

Regulatory Assessment Requirements

A. Executive Order 12866

Under Executive Order 12866 (56 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is "significant" and therefore subject to all the requirements of the Executive Order (i.e., Regulatory Impact Analysis and review by the Office of Management and Budget). Under section 3(f), the order defines "significant" as those actions likely to lead to a rule: (1) Having an annual effect on the economy of \$100 million or more, or adversely and materially

affecting a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities (also known as "economically significant"); (2) creating serious inconsistency or otherwise interfering with an action taken or planned by another agency; (3) materially altering the budgetary impacts of entitlements, grants, user fees, or loan programs; or (4) raising novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this order. Pursuant to the terms of this order, EPA has determined that this stay would not be "significant".

B. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, EPA is certifying that a stay of these criteria would not have a significant impact on a substantial number of small businesses.

C. Paperwork Reduction Act

There are no information collection requirements associated with this administrative stay covered under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*

List of Subjects in 40 CFR Part 131

Environmental protection, Water pollution control, Water quality standards, Toxic pollutants.

Dated: April 14, 1995.

Carol M. Browner,
Administrator.

For the reasons set out in the preamble, part 131 of title 40 of the Code of Federal Regulations is amended as follows:

PART 131—[AMENDED]

1. The authority citation for part 131 continues to read as follows:

Authority: 33 U.S.C. 1251 *et seq.*

2. Part 131 is amended by adding at the end of § 131.36(b)(1) the following "Note to paragraph (b)(1)":

§ 131.36 Toxics criteria for those States not complying with Clean Water Act Section 303(c)(2)(B).

(b)(1) * * *

Note to paragraph (b)(1): On April 14, 1995, the Environmental Protection Agency issued a stay of certain criteria in paragraph (b)(1) of this section as follows: the criteria in columns B and C for arsenic, cadmium, chromium (VI), copper, lead, nickel, silver, and zinc; the criteria in B1 and C1 for mercury; the criteria in column B for chromium (III);

and the criteria in column C for selenium. The stay remains in effect until further notice.

[FR Doc. 95-10147 Filed 5-3-95; 8:45 am]

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 131

[WH-FRL-5196-1]

Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants; States' Compliance—Revision of Metals Criteria

AGENCY: Environmental Protection Agency (EPA).

ACTION: Interim final rule, notice of data availability and request for comments.

SUMMARY: EPA is promulgating new aquatic life metals criteria for nine States, Puerto Rico, and the District of Columbia, that are subject to EPA's 1992 National Toxics Rule ("NTR"). These new metals criteria reflect EPA's current policy for setting water quality criteria for metals. This interim final rule establishes metals criteria that are protective of aquatic life and approximate, better than the 1992 criteria, the biologically available fraction of water borne metals to aquatic organisms. Use of the new metals criteria will allow permitting authorities in the nine States, Puerto Rico and the District of Columbia, to establish effluent limitations based on the new metals criteria rather than the 1992 criteria which EPA now considers to be more stringent than may be necessary to protect designated uses for aquatic life. The interim final rule will be in effect while EPA considers public comments and develops a final rule. This rule terminates the Administrative Stay published elsewhere in this issue of the Federal Register.

DATES: This interim final rule is effective April 15, 1995. Comments on the interim final rule and other data noticed in this preamble will be accepted until July 3, 1995.

ADDRESSES: An original and 3 copies of all comments and references on the interim final rule and data should be addressed to: Revision of the National Toxics Rule-Dissolved Metals Criteria, Comment Clerk; Water Docket (MC-4101), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. The administrative record for this rulemaking is available for review and copying at the Environmental

Protection Agency, Office of Water Docket, 401 M Street SW., Washington DC, 20460, Room L102, on weekdays during EPA's normal business hours of 8 a.m. until 4:30 p.m. For access to the Docket materials, call (202) 260-3027 between 9:00 a.m.—3:30 p.m., for an appointment. A reasonable fee will be charged for photocopies.

FOR FURTHER INFORMATION CONTACT: Timothy J. Kasten, telephone 202-260-5994.

SUPPLEMENTARY INFORMATION:

A. General Background

1. Regulatory Background

In the NTR, EPA promulgated numeric water quality criteria for 12 States, Puerto Rico, and the District of Columbia, that failed to comply fully with Section 303(c)(2)(B) of the Clean Water Act. (57 FR 60848, December 22, 1992 codified in the Code of Federal Regulations at 40 CFR 131.36).¹ Those criteria became the legally enforceable water quality standards in the named States, Puerto Rico, and the District of Columbia, for all purposes and programs under the Clean Water Act on February 5, 1993. Included among the water quality criteria promulgated in the NTR were numeric criteria for the protection of aquatic life for 11 metals: arsenic, cadmium, chromium (III), chromium (VI), copper, lead, mercury, nickel, selenium, silver, and zinc.

The Agency received extensive public comment during the development of the NTR regarding the most appropriate approach for expressing the metals criteria. The principal issue was the correlation between metals that are measured and metals that are bioavailable and toxic to aquatic life.

2. Policy on Aquatic Life Metals Criteria

At the time of the NTR promulgation, Agency policy was to express metals criteria, as recommended in its Section 304(a) criteria documents, as total recoverable metal measurements. Agency guidance prior to the NTR promulgation indicated that metals criteria may be expressed either as total recoverable metal or dissolved metal.²

¹ In the NTR, EPA determined compliance with Section 303(c)(2)(B) based on the status of State compliance as of 1991, the date of the proposed rulemaking, and then took into account EPA approval actions between the proposed and final rulemaking for those States included in the proposed rule. EPA acknowledges that, due to subsequent State actions to delete or otherwise modify toxics criteria (e.g., see Table 1, 57 FR 60856, December 22, 1992), all States and Territories currently may not be in full compliance with Section 303(c)(2)(B).

² Interim Guidance on Interpretation and Implementation of Aquatic Life Criteria for Metals.

Because the NTR was to cover a substantial number of water bodies of varying water quality, EPA selected what it considered the simplest, more conservative approach and the approach reflected in its criteria documents, to implement the metals criteria, namely the total recoverable method. Accordingly, the metals criteria promulgated in the NTR were expressed as total recoverable metals, although EPA also provided for site-specific criteria development.³

Thereafter, EPA continued to work with States and other interested parties on the issue of metals bioavailability and toxicity. EPA held a workshop of invited experts on this issue; the results of the consultations were published at 58 FR 32131, June 8, 1993. As a result of these consultations, the Agency issued a policy memorandum on October 1, 1993, entitled: *Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria* ("Metals Policy"). (The complete October 1, 1993 memorandum can be obtained from EPA's Office of Water Resource Center (202) 260-7786 or the Office of Water Docket.) The Metals Policy states:

It is now the policy of the Office of Water that the use of dissolved metal to set and measure compliance with water quality standards is the recommended approach, because dissolved metal more closely approximates the bioavailable fraction of metal in the water column than does total recoverable metal.

It further states:

Until the scientific uncertainties are better resolved, a range of different risk management decisions can be justified. EPA recommends that State water quality standards be based on dissolved metal. EPA will also approve a State risk management decision to adopt standards based on total recoverable metal, if those standards are otherwise approvable as a matter of law. (See Section 510, Federal Water Pollution Control Act, Public Law 100-4, 33 U.S.C. 466 et seq.)

The adoption of the Metals Policy did not change the Agency's position that the existing total recoverable criteria published under Section 304(a) of the Clean Water Act continue to be scientifically defensible. EPA developed the total recoverable criteria using high-quality analytical data and are still scientifically defensible criteria. When developing and adopting its own standards, a State, in making its risk management decision, may wish to consider sediment, food chain effects

and other fate-related issues and decide to adopt total recoverable or dissolved metals criteria.

In general, EPA continues to conduct research on metals toxicity to further refine the criteria and their implementation. However, the aim of both the Clean Water Act and EPA policy is that a more effective way of incorporating new science into the water quality program is for the States to promulgate their own standards and implementation policies. The States can then make appropriate updates, rather than relying on Federal promulgations such as today's rule.

3. Litigation and Settlement of NTR Metals Issues

A number of parties brought lawsuits challenging the NTR metals criteria. See *American Forest and Paper Ass'n, Inc. et al. v. EPA*, Consolidated case No. 93-0694 RMU (D.D.C.) The Plaintiffs in those lawsuits wanted the permitting authorities in the NTR States to use criteria based on dissolved metal rather than total recoverable. After careful consideration of the issue, EPA concluded that it was in the public interest to revise the metals criteria promulgated in the NTR to reflect the Office of Water's new metals policy. On February 15, 1995, EPA and the Plaintiffs filed a partial settlement agreement with the court. Pursuant to the terms of the partial settlement agreement, EPA agreed to issue an administrative stay of the numeric aquatic life water quality criteria (expressed as total recoverable metal) for: arsenic, cadmium, chromium (III), chromium (VI), copper, lead, mercury (acute only), nickel, selenium (saltwater only), silver, and zinc. That stay is published in a separate notice in today's Federal Register. The stay is intended to be in effect only until EPA takes action to amend the NTR by promulgating new metals criteria based on dissolved metal. With today's interim final rule, EPA is promulgating new metals criteria for those metals listed in the stay based on dissolved metal and therefore this action will supersede the administrative stay.

B. Today's Interim Final Rule

EPA's action today revises the NTR that established numeric aquatic life metals criteria for 9 States, Puerto Rico and the District of Columbia (Table 1). (Of the 12 NTR States, aquatic life metals criteria were only promulgated for nine.) The numeric criteria in today's rule reflect the Office of Water's current policy with respect to metals. This action promulgates dissolved metals criteria for those total

recoverable metals criteria subject to the Agency's administrative stay.

TABLE 1.—STATES SUBJECT TO THE REVISED METALS CRITERIA¹

Alaska
Arkansas
California
Idaho
Kansas
Michigan
New Jersey
Vermont
Washington
District of Columbia
Puerto Rico

¹ Today's interim final rule may have differing applicability for each of the States in this table depending on the State's individual compliance with Section 303(c)(2)(B) of the Clean Water Act. See 40 CFR 131.36(d) for State applicability.

C. Conversion Factors: Total Recoverable to Dissolved Metal

Because EPA's Section 304(a) criteria are expressed as total recoverable metal, to express the criteria as dissolved, application of a conversion factor is necessary to account for the particulate metal present in the laboratory toxicity tests used to develop the total recoverable criteria. Initially, EPA included a set of recommended freshwater conversion factors with the Metals Policy. Based on additional laboratory evaluations that simulated the original toxicity tests, EPA has refined the procedures used to develop freshwater conversion factors for aquatic life criteria. EPA made new conversion factors available for public comment in the context of EPA's Proposed Guidance for the Great Lakes System on August 30, 1994, at 59 FR 44678.

EPA has also conducted saltwater laboratory simulation tests for the development of conversion factors for saltwater metals criteria. The saltwater simulation tests were conducted using the same methodology as the freshwater tests with minor modifications, necessary to account for saltwater. The saltwater test results are being made available with today's rule. The conversion factors in this rule and other technical reports referenced herein, supersede the conversion factors presented in Attachment #2 of the Metals Policy.

Total recoverable to dissolved metal conversion factors were attached to the partial settlement agreement in the form of a draft guidance entitled, *Guidance to States Subject to the National Toxics Rule For Setting NPDES Limits During the Stay of the Metals Criteria*. (The partial settlement agreement is available from the Water Docket.) The draft guidance used data that were available through December 21, 1994. The

U.S. EPA, May 1992. (Notice of availability published at 57 FR 24041, June 5, 1992.)

³ See Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals, February 1994, EPA 823-B-94-001.

conversion factors presented in today's rule reflect the best science available to EPA at the time of promulgation and contain minor modifications from those in the attachment to the February 15 partial settlement agreement. For each metal specific conversion factor, the changes between the draft guidance and today's rule are less than 10%. EPA has determined these changes to be minor.

1. Freshwater Criteria Conversion Factors

The final freshwater conversion factors used in today's rule are contained in: "Derivation of Conversion Factors for the Calculation of Dissolved Freshwater Aquatic Life Criteria for Metals" (U.S. EPA, 1995), available from the Water Docket and are presented in Table 2 below. This study did not include laboratory simulation tests for mercury or silver, therefore, the freshwater conversion factors for mercury and silver used today are from the Metals Policy.

The conversion factors for most freshwater metals were established as constant values. For cadmium and lead however, EPA found that water hardness mediated the conversion factor and should be taken into account when converting total recoverable cadmium and lead criteria to dissolved. Table 2 presents the hardness-dependent conversion factors for cadmium and lead. The hardness-dependent conversion factor for lead was included in the August 30, 1994 Notice of Availability (59 FR 44678). In today's action, EPA is specifically requesting comment on the use of hardness-dependent conversion factor for cadmium.

TABLE 2.—FRESHWATER CRITERIA CONVERSION FACTORS FOR DISSOLVED METALS

Metal	Conversion factors ^a	
	Acute	Chronic
Arsenic	1.000	1.000
Cadmium ^b	0.944	0.909
Chromium (III)	0.316	0.860
Chromium(VI)	0.982	0.962
Copper	0.960	0.960
Lead ^b	0.791	0.791
Mercury	< 0.85	< N/A
Nickel	0.998	0.997
Silver	< 0.85	< N/A
Zinc	0.978	0.986

^a The conversion factors are given to three decimal places because they are intermediate values in the calculation of dissolved criteria.

^b Conversion factors are hardness-dependent. The values shown are with a hardness of 100 mg/L as calcium carbonate (CaCO₃). Conversion factors (CF) for any hardness can be calculated using the following equations:

Cadmium
Acute: $CF = 1.136672 - \{(\ln \text{ hardness}) (0.041838)\}$
Chronic: $CF = 1.101672 - \{(\ln \text{ hardness}) (0.041838)\}$
Lead (Acute and Chronic): $CF = 1.46203 - \{(\ln \text{ hardness}) (0.145712)\}$

^c Conversion factor from: Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993. Factors were expressed to two decimal places.

^d CCC for mercury cannot be converted to dissolved, because it is based on mercury residues in aquatic organisms rather than toxicity.

^e Not applicable, EPA has not published final chronic criteria values for silver.

2. Saltwater Criteria Conversion Factors

Acute saltwater conversion factors are being made available through today's rule. The data and the acute criteria conversion factors for saltwater are contained in: "Derivation of Conversion Factors for the Calculation of Dissolved Saltwater Aquatic Life Criteria for Metals" (U.S. EPA 1995). This summary report and its supporting data are available from the Water Docket. Saltwater chronic conversion factors have not been developed separately and therefore are not available for today's rule. Based on close similarities between the freshwater acute and chronic conversion factors, EPA believes that, if calculated, the chronic saltwater conversion factors would be nearly the same as the acute saltwater factors. In the absence of these chronic conversion factors, the saltwater acute conversion factors will apply. The saltwater conversion factors are presented in Table 3 below. Saltwater simulation tests were not completed for mercury or silver, therefore the conversion factors from the Metals Policy will continue to apply.

TABLE 3.—SALTWATER CRITERIA CONVERSION FACTORS FOR DISSOLVED METALS

Metal	Conversion factors ^a
Arsenic	1.000
Cadmium	0.994
Chromium (III)	(^d)
Chromium (VI)	0.993
Copper	0.83
Lead	0.951
Mercury	^b < 0.85
Nickel	0.990
Selenium	0.998
Silver	^b 0.85
Zinc	0.946

^a Conversion factors on this table were calculated for acute criteria only. Conversion factors for chronic criteria are not currently available. In the absence of chronic conversion factors saltwater acute conversion factors are used.

^b Conversion factor from: Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993. Factors were expressed to two decimal places.

^c CCC for mercury cannot be converted to dissolved, because it is based on mercury residues in aquatic organisms rather than toxicity.

^d No saltwater criteria.

D. Applicability Requirements for Metals Criteria

Through today's action, EPA is also requesting comments on the applicability requirements in 40 CFR 131.36(c) as they apply to the metals criteria. In particular, EPA is requesting comments on § 131.36(c)(4)(i) regarding the calculation of hardness-dependent freshwater metals criteria. Section 131.36(c)(4)(i) describes the minimum and maximum hardness values (25 mg/L and 400 mg/L as CaCO₃, respectively) to be used when calculating hardness-dependent freshwater metals criteria. This requirement is not changed by today's interim final rule, however EPA is requesting comment on an alternative approach. Most of the data used to develop these hardness formulas were in the hardness range of 25 mg/L to 400 mg/L as CaCO₃. The formulas are therefore most accurate in this range. Using a hardness of 25 mg/L for calculating criteria, when the actual ambient hardness is less than 25 mg/L, could result in criteria that are under-protective of aquatic life. EPA is therefore requesting comments on the use of the actual ambient hardness for calculating criteria when the hardness is below 25 mg/L as CaCO₃.

Most freshwaters of the U.S. have an ambient hardness of less than 400 mg/L as CaCO₃. Using 400 mg/L to calculate criteria, for waters with an ambient hardness of greater than 400 mg/L, may result in over-protective criteria because at a hardness above 400 mg/L, other confounding factors, which may cause this hardness, can also affect the toxicity. EPA is requesting comment on an approach that would make two options available for calculating metals criteria for waters with a hardness of greater than 400 mg/L as CaCO₃: *Option 1*—use 400 mg/L as CaCO₃ for the criteria calculation or, *Option 2*—use the actual hardness and require the use of the water-effect ratio to modify the final criteria value to more accurately reflect ambient conditions. (EPA notes that in the NTR States, the use of the water-effect ratio is assigned a value of 1.0, unless otherwise specified by the permitting authority. See 40 CFR 131.36(c)(4)(iii).)